NH21A-3823 A Natural Laboratory for Offshore Paleotsunami Studies: The Augusta Bay (Eastern Sicily-Italy)

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The recent results obtained from a 6.7 m-long piston-core (MS06), collected 2.3 km offshore Augusta at a water depth of 72 m and made of an almost homogeneous dark gray mud dated back to the last 4500 yrs, stimulated our curiosity in searching for other similar signatures. In fact, quantitative micropaleontological analysis of benthic foraminifera assemblages highlighted 12 anomalous intervals, marked by peaks with high percentages of displaced epiphytic specimens and an increase in the sandy component. These anomalies were generally accompanied by a significant amount of *Posidonia* remnants, a localized concentration of molluscs and organic-rich bands. Thus, the twelve anomalous peaks were interpreted as the primary effect of tsunami waves (back-wash). Moreover, five out of the twelve anomalous layers were embedded in age intervals encompassing the dates of major tsunamis that hit eastern Sicily (1908, 1693, and 1169) and the broader Eastern Mediterranean (AD 365 Crete and Santorini at about BP 3600).
Seven additional cores were sampled from the northern part of the Augusta Bay, along a transect 60 to 110 m of water depth, to retrieve the details of the MS06 sequence uppermost part. Four out of the seven new cores were selected and studied. Preliminary dating suggests that the sampled sequence spans ca. 400-500 yrs. Moreover, physical properties, ITRAX X-ray fluorescence (XRF) and grain size analyses point out the presence of a peculiar interval made of *Posidonia* remnants, coarse sand and shell debris on the two cores closer to the shore. The two far-off cores seem to be more homogenous but a few thin sandy lenses enriched of *Posidonia* remnant were also recognized. Further detailed micropaleontological analysis and corroboration with instrumental data are still in progress and will help in discriminating single events potentially related to tsunami back-wash.

Authors

Alessandra Smedile
INGV National Institute of Geophysics and Volcanology

Flavia Molisso
CNR Institute for Coastal Marine Environment

Catherine Chague-Goff
Australian Nuclear Science and Technology Organization
University of New South Wales

Paolo Marco De Martini
INGV National Institute of Geophysics and Volcanology

Stefania Pinzi
INGV National Institute of Geophysics and Volcanology

Marina Iorio
CNR Institute for Coastal Marine Environment

Leonardo Sagnotti
INGV National Institute of Geophysics and Volcanology

Daniela Pantosti
INGV National Institute of Geophysics and Volcanology

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